

REMARKS

Claims 1-4, 6-8 and 11-18 are pending herein. By this Amendment, claims 1, 14 and 16 have been amended, and claims 17 and 18 have been cancelled.

Claims 1 and 16 have been amended in part to describe the dewetting composition therein as "water-removing". Applicants respectfully submit that this amendment does not raise new issues because as it is used in the instant application, the term "dewetting" clearly refers to the removal of water from solid surfaces. For example, at page 1, lines 2-5, the instant specification states that:

[t]he invention relates to the field of drying and the subject
of the invention is more particularly compositions for
removing the water which superficially wets solid surfaces

....

Thus, Applicants submit that one skilled in the art would understand from the specification that the term "dewetting" as used therein refers to the removal of water from solid surfaces. Therefore, Applicants respectfully request entry of this amendment to claims 1 and 16.

Claims 1 and 16 have been further amended to state that the amount of the polyfluorinated alcohol is from 2% to 30% by weight. Claim 14 has been amended to state that the amount of the polyfluorinated alcohol is from 2% to 5% by weight. Support for these recitations can be found in cancelled claims 17 and 18, respectively. Because these amendments to claims 1, 14 and 16 relate to limitations found in previously existing and already-examined claims, Applicants submit that they do not raise new issues. Thus, Applicants respectfully request entry of these amendments.

In the Office Action, claims 1-4, 6, 11-15, 17 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,957,672 to Zisman et al. ("Zisman"); and claims 1-3, 7, 8 and 11-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zisman in view of U.S. Patent No. 5,514,301 to Bil et al. ("Bil").

In view of the aforementioned amendments and the remarks below, Applicant respectfully requests reconsideration and withdrawal of the rejections set forth in the Office Action.

I. Rejection of Claims 1-4, 6, 11-15, 17 and 18

Claims 1-4, 6, 11-15, 17 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zisman. Claims 17 and 18 have been cancelled.

As stated above, claims 1 and 14 have been amended to describe the dewetting composition therein as “water-removing” and to recite that the polyfluorinated alcohol(s) is present in an amount of from 2% to 30% by weight of the composition. Claims 2-4, 6, 11, 13, 14 and 15 depend directly or indirectly upon claim 1. Claim 12 is directed to a method which uses the composition of claim 1. Claim 14 narrows the alcohol content to a range of from 2% to 5%.

Zisman is cited for teaching a surface active composition for displacing aqueous or organic liquid films from solid surfaces, wherein the composition may contain fluoroalcohols in an amount of up to 1%.

According to the Office Action, the amount “up to 1% fluoroalcohol” taught in Zisman encompasses the 1% and 2% amounts of fluoroalcohol claimed by Applicants.

Applicants respectfully submit that Zisman would not have rendered instant claims 1-4, 6 and 11-15 obvious.

When Zisman discloses the use of a fluoroalcohol in an amount up to 1% by weight, it is in the context of displacing *organic* liquid films from solid surfaces, not in the context of displacing water from solid surfaces.

For example, at column 2, lines 53-55, Zisman teaches that the solute in the composition therein can be a fluoroalcohol. The reference then states the following:

The amount of the solute in the compositions is small and may be varied with selection as to the amount being made on the basis of the liquid displacing activity of the particular solutes. In general, amounts of the solute which are in the range of from about 0.02 to 1 percent by weight of the compositions will be found effective for surface-chemical displacement of *organic liquid* films from solid surfaces by the method of the invention. [emphasis added] (col. 2, lines 56-64)

Likewise, the composition disclosed in Example 3 in Zisman (see column 5), which contains 99.1% by weight of OPFP-3 and 0.9% by weight of perfluorooctanol-1, is taught to be useful for displacing liquid organic film from solid surfaces (col. 4, lines 56-57).

Zisman does not teach or suggest the displacement or removal of water from solid surfaces and does not teach or suggest what amount, if any, of a fluoroalcohol would be useful in the displacement or removal of water. Thus, although Zisman teaches that up to 1% of a fluoroalcohol can be used in the composition therein to displace organic liquid from solid surfaces, the reference does not teach or suggest that such amount or any amount of a fluoroalcohol can be used to displace water from solid surfaces.

Applicants had an experiment conducted which compared the ability of a specific amount of a polyfluorinated alcohol to remove water with the ability of the same amount of the same polyfluorinated alcohol to remove an organic liquid.

In the aforementioned experiment, a dewetting solution was provided which contained a blend of 97.4% by weight of HFC (specifically: 80% by weight HFC 365 mfc/20% by weight HFC 43 10 mee)¹, 0.6% by weight of surface active agent SA2², and 2% TDFO (tridecafluorooctanol). Eighty (80) milliliters of the dewetting solution was introduced into a 100 ml beaker at ambient temperature. A 4x2 cm stainless steel plate, wetted beforehand by immersion in water, was then immersed in the dewetting solution for one minute. After withdrawal of the plate from the solution, the plate was observed to be practically dry.

The above procedure was then repeated except that, instead of wetting a 4x2 stainless steel plate with water, two (2) grams of Wynn'draw oil (available from Wynn's) was spread onto the plate. The oil-covered plate was then immersed in the dewetting

¹ "HFC" represents a fluorinated hydrocarbon; "HFC 365 mfc" represents 1,1,1,3,3-pentafluorobutane; and "HFC 43-10 mee" represents 1,1,1,2,3,4,4,5,5,5-decafluoropentane.

² The process for making the surface active agent "SA2" is set forth on page 9, lines 1-6, of the instant specification.

solution for one minute. After its withdrawal from the solution, the plate was observed to still be covered with the oil.

Thus, the above experiment shows that the ability of a specific amount of a specific polyfluorinated alcohol to remove water from a solid surface does not mean that the same amount of the same polyfluorinated alcohol can remove oil from the same type of solid surface. In other words, the fact that a particular amount of a particular polyfluorinated alcohol can effectively remove water from a solid surface does not mean it can remove an organic liquid from the solid surface and vice-versa.

As stated above, Zisman does not teach or suggest the displacement or removal of water from solid surfaces and does not teach or suggest what amount, if any, of a fluoroalcohol would be useful in the displacement or removal of water.

Accordingly, Applicants respectfully submit that one skilled in the art would not have been motivated by Zisman to use a fluoroalcohol in the amount of 2% by weight (an amount of fluoroalcohol not even mentioned in Zisman) to remove water from a solid surface.

Therefore, for at least the foregoing reasons, Applicants respectfully submit that claims 1-4, 6 and 11-15 would not have been obvious over Zisman.

II. Rejection of Claims 1-3, 7, 8 and 11-16

Claims 1-3, 7, 8 and 11-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zisman in view of Bil.

Like claim 1, claim 16 has been amended to recite that the polyfluorinated alcohol of formula (I) is present in the composition in an amount of from 2% to 30% by weight.

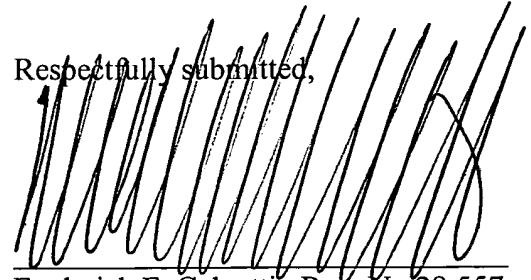
Bil does not teach or suggest the use of the polyfluorinated alcohol recited in Applicants' claims. Therefore, Bil does not cure the failure of Zisman to teach what amount of a fluoroalcohol would be effective in removing water from a solid surface.

Thus, for at least this reason, Applicant submits that claims 1-3, 7, 8 and 11-16 would not have been obvious over Zisman in view of Bil.

III. Conclusion

In view of the amendments made herein and the foregoing remarks, Applicant respectfully requests that the rejections of claims 1-4, 6-8 and 11-16 be withdrawn and that these claims be allowed.

Respectfully submitted,

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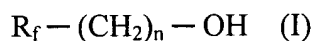
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LISTING OF CLAIMS

Claim 1 (Currently Amended): A water-removing dewetting composition, consisting essentially of a solution of between 0.01 and 0.5% by weight of at least one surface-active agent in a mixture of at least one fluorinated solvent and from ~~greater than about 1%~~ 2% to 30% by weight of at least one water-miscible polyfluorinated alcohol of formula:



in which n is equal to 1 or 2 and R_f represents a linear or branched perfluoroalkyl radical containing from 4 to 8 carbon atoms,

wherein said composition does not exhibit a flash point under standard determination conditions (ASTM standard D 3828) and wherein the fluorinated solvent is a saturated or unsaturated fluorinated hydrocarbon containing from 3 to 6 carbon atoms.

Claim 2 (Previously Amended): The composition according to Claim 1, wherein the composition contains at least one alcohol of formula (I) in which n is equal to 2.

Claim 3 (Previously Amended): The composition according to Claim 1, wherein the alcohol of formula (I) is tridecafluorooctanol (C₆F₁₃CH₂CH₂OH).

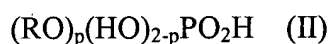
Claim 4 (Previously Amended): The composition according to Claim 1, wherein the fluorinated solvent has a normal boiling point of between 20 and 100°C.

Claim 5 (Cancelled)

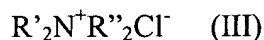
Claim 6 (Previously Amended): The composition according to Claim 4, wherein the fluorinated hydrocarbon is selected from 1,1,1,3,3-pentafluorobutane, 1,1,1,2,2,4,4-heptafluorobutane, 1,1,1,2,3,4,4,5,5,5-decafluoropentane, 1,1,1,2,2,3,3,4,4-

nonafluorohexane, 1H-perfluorohexane, n-perfluorohexane, (perfluorobutyl) ethylene and perfluoro (methylmorpholine).

Claim 7 (Previously Amended): The composition according to Claim 1, wherein the surface-active agent is a cationic surface-active agent obtained by reaction of a mono- or dialkylphosphoric acid of formula:



in which p is a number ranging from 1 to 2 and R denotes a linear or branched alkyl radical containing from 1 to 18 carbon atoms, with a quaternary ammonium chloride of formula:



in which R' and R'', which are identical or different, each represent a hydrogen atom or an alkyl or hydroxyalkyl radical containing 1 to 4 carbon atoms, and a fluorinated amine of formula:



in which R_f represents a linear perfluoroalkyl radical containing from 2 to 20 carbon atoms, X represents a divalent bridge and the symbols R¹ and R², which are identical or different, each represent a hydrogen atom or an alkyl or hydroxyalkyl radical containing 1 to 4 carbon atoms.

Claim 8 (Previously Amended): The composition according to Claim 7, wherein R is butyl, hexyl, 2-ethylhexyl, octyl or tridecyl radical, R' is a dodecyl or octadecyl radical, R'' is a methyl radical, X is a -CH₂CH₂SO₂NHCH₂CH₂- or -C₂H₄CONHCH₂CH₂- bridge and R¹ and R² are methyl radicals.

Claim 9 (Cancelled)

Claim 10 (Cancelled)

Claim 11 (Previously Amended): The composition according to Claim 1, wherein said composition is in the form of a concentrate containing up to 30% by weight of surface-active agent(s).

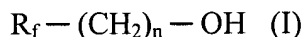
Claim 12 (Previously Amended): ^A~~The~~ method for dewetting of solid surfaces comprising treating a solid surface with the composition of claim 1.

Claim 13 (Previously Amended): The composition according to Claim 4, wherein the boiling point of the fluorinated solvent is between 30 and 75°C.

Claim 14 (Currently Amended): The composition according to Claim 1, wherein the content of polyfluorinated alcohol(s) is from ~~greater than about 1%~~ 2% to 5%.

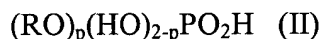
Claim 15. (Previously Amended) The composition according to Claim 1, wherein the content of the surface-active agent(s) is between 0.04 and 0.2%.

Claim 16 (Currently Amended): A water-removing dewetting composition, consisting essentially of a solution of at least one surface-active agent in a mixture of at least one fluorinated solvent and from ~~greater than about 1%~~ 2% to 30% by weight of at least one water-immiscible polyfluorinated alcohol of formula:

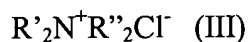


in which n is equal to 1 or 2 and R_f represents a linear or branched perfluoroalkyl radical containing from 4 to 8 carbon atoms,

wherein the surface-active agent consists of a cationic surface-active agent obtained by reaction of a mono- or dialkyl phosphoric acid of formula:



in which p is a number ranging from 1 to 2 and R denotes a linear or branched alkyl radical containing from 1 to 18 carbon atoms, with a quaternary ammonium chloride of formula:



in which R' and R'', which are identical or different, each represent a hydrogen atoms or an alkyl or hydroxyalkyl radical containing 1 to 4 carbon atoms, and a fluorinated amine of formula:



in which R_f represents a linear perfluoroalkyl radical containing from 2 to 20 carbon atoms, X represents a divalent bridge and the symbols R^1 and R^2 , which are identical or different, each represent a hydrogen atom or an alkyl or hydroxyalkyl radical containing 1 to 4 carbon atoms;

further wherein said composition does not exhibit a flash point under standard determination conditions (ASTM standard D 3828) and wherein the fluorinated solvent is a saturated or unsaturated fluorinated hydrocarbon containing from 3 to 6 carbon atoms.

Claim 17 (Cancelled)

Claim 18 (Cancelled)